State of California AIR RESOURCES BOARD

PUBLIC HEARING TO CONSIDER APPROVAL OF THE 1999 AMENDMENT TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S 1997 AIR QUALITY MANAGEMENT PLAN AS A REVISION TO THE CALIFORNIA STATE IMPLEMENTATION PLAN FOR OZONE

STAFF REPORT

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California Environmental Protection Agency



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EXECUTIVE SUMMARY

This report presents the California Air Resources Board (ARB or Board) staff's evaluation of the South Coast Air Quality Management District's (District) 1999 Amendment (1999 Amendment) to its 1997 Air Quality Management Plan (1997 AQMP). The 1999 Amendment strengthens the District's ozone control strategy, which ARB previously approved as part of the 1997 AQMP. Staff recommends that the Board approve the 1999 Amendment for submittal to the U.S. Environmental Protection Agency (U.S. EPA) as an interim revision to the California State Implementation Plan (SIP) to meet the health-based, federal one-hour ozone standard in the South Coast by 2010. U.S. EPA has indicated its intention to take final action on the 1997 AQMP as amended on an expedited schedule, provided ARB approves and forwards the plan.

The District adopted the 1997 AQMP, and ARB approved the plan and submitted it to U.S. EPA as revision to the federally enforceable 1994 Ozone SIP. The 1997 AQMP was based on updated air quality data, emissions data, and modeling which demonstrated that the ozone standard could be attained in 2010 with fewer emission reductions than indicated in the 1994 SIP. Accordingly, the 1997 AQMP relied on fewer emissions reductions from local control measures than did the 1994 SIP. The State and federal measures in the 1994 SIP were carried over to the 1997 AQMP without change, except that the expected emission reductions were recalculated using the inventory in the 1997 AQMP.

On December 10, 1999, the District adopted the 1999 Amendment to update the 1997 AQMP and to address portions of the 1997 AQMP that U.S. EPA has proposed to disapprove. The District concurrently resolved a legal dispute over implementation of its portion of the 1994 SIP with a settlement agreement based on the commitments in the 1999 Amendment. Although the 1999 Amendment relies on the same inventory, modeling, and total emission reductions as the 1997 AQMP, the new amendment accelerates District adoption and implementation of the local measures. If approved by ARB and U.S. EPA, the 1997 AQMP as revised by the 1999 Amendment will replace the 1994 Ozone SIP as the applicable SIP for the South Coast.

Overview of the 1999 Amendment

The 1999 Amendment will revise only the local control strategy in the 1997 AQMP -- it provides for earlier adoption of all or part of four long-term measures from the 1997 AQMP, adds four new short-term measures, and revises the implementation dates for 13 short-term measures. It does not change other aspects of the 1997 AQMP attainment strategy, such as the emission inventories or attainment demonstration modeling. The 1999 Amendment does not revise the State or federal measures. The major changes to the District's SIP commitments are summarized below:

Commitment to Develop Specific New Measures. In the 1999 Amendment, the District commits to develop 26 short-term measures, which are expected to provide about two-thirds of the 76 tons per day (TPD) of volatile organic compounds (VOC) and all 7.6 TPD of nitrogen oxides (NOx) reductions needed from District stationary source measures to attain by 2010. [Two of those measures have since been adopted]. The District also lists four long-term measures to supply the

remaining reductions, as needed. If the District staff subsequently believes a measure in the 1999 Amendment to be infeasible, the District Board will consider such a finding in a public hearing. If a proposed measure is found to be infeasible or less effective, the District will achieve equivalent reductions, on the same schedule, through another rule or program.

Commitment to Specified New Emission Reductions by Year. The 1999 Amendment also contains a separate, but complementary commitment to achieve certain new emission reductions in specified years, for a short-term total of 48.1 TPD VOC and 7.6 TPD NOx in 2010. As part of this commitment, the District identified the schedule for adoption (from 1999 through 2003) and final implementation (from 2002 through 2008) of whatever rules are needed to achieve the specified reductions.

Commitment to Implement Rules Adopted Since the 1994 SIP. The 1999 Amendment also specifies that the 154 TPD of VOC and 4 TPD of NOx emission reductions assumed from control measures adopted since the 1994 SIP are part of the District's commitments, making those reductions enforceable.

Upcoming Comprehensive SIP Revision

We view the 1997 AQMP as revised by the 1999 Amendment as an interim update to the SIP. District and ARB staffs are jointly preparing the technical elements of a comprehensive air quality plan revision that will address ozone, particulate matter, and carbon monoxide. Even as the 1997 AQMP was adopted, ARB Executive Officer Michael Kenny noted that "Both ARB and District staff recognize the limitations of the available data and the need to significantly improve the [air quality] model's performance...we will work with the District to improve the model's inputs and carry out the 1997 Southern California Ozone Study as a means to improve input data and model performance."1

The Southern California Ozone Study (SCOS) is a coordinated effort to provide better ozone air quality modeling tools for the entire Southern California region. An intensive air quality monitoring program conducted in the summer of 1997 (and continued in limited form in 1998) is now providing an extensive array of data on the conditions that contribute to high ozone concentrations in Southern California. ARB and District staff are also updating emission inventories (utilizing EMFAC2000 motor vehicle emission estimates, the new OFFROAD mobile source model, and updated regional growth and control effectiveness data) for use in these models. This effort is expected to produce a new carrying capacity for ozone precursors in the South Coast. The comprehensive plan update will reflect this new information, as well as an updated control strategy, for consideration by the District and ARB in the late 2000-early 2001 timeframe and submittal to U.S. EPA as a SIP revision in 2001.

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¹ Michael P. Kenny, Executive Officer, Air Resources Board; October 1, 1996 letter to Dr. James M. Lents, Executive Officer, South Coast Air Quality Management District, conveying general comments on the District's Draft 1997 Air Quality Management Plan.

I. BACKGROUND

In many parts of California, ozone is primarily a summertime pollutant. However, the climate and geography of the South Coast Air Basin create conditions that are particularly conducive to ozone formation. Throughout much of the 1900's, the region's swelling population and economy generated emissions that resulted in unhealthy ozone levels in all but the winter months. Aggressive air pollution control programs have significantly reduced both emissions and ambient ozone concentrations in the South Coast Air Basin (including Los Angeles and Orange Counties, plus western Riverside and San Bernardino). Until the 1999 ozone season, the South Coast region has experienced the most severe ozone pollution in the nation, based on the peak levels and the number of days when air quality violates the federal standard. [In 1999, the Houston area recorded higher ozone levels and the same number of exceedance days. It remains to be seen whether 1999 was an anomaly or the start of a trend.]

This chapter provides a context for the 1999 Amendment by describing the federal statutory requirements for ozone attainment and rate-of-progress plans, as well as the series of ozone plans developed for the South Coast since 1994. It also briefly covers the plan-related litigation and recent settlements.

A. <u>Federal Clean Air Act Planning Requirements</u>

Exposure to ozone--or smog--can cause shortness of breath and respiratory problems, aggravation of asthma, chest pain, coughing and, over the long-term, even permanent lung damage. The health-based federal ozone standards are: 0.12 ppm ozone averaged over one hour, and 0.08 ppm averaged over eight hours (California also established a state one-hour ozone standard of 0.09 ppm). The federal Clean Air Act (CAA) establishes planning requirements for those areas where ozone concentrations routinely exceed the National Ambient Air Quality Standards (NAAQS). The CAA requires these "nonattainment" areas to adopt and implement State Implementation Plans (SIPs) that demonstrate how each area will attain the standards by specified dates. SIPs must also establish rate-of-progress milestones and demonstrate how the attainment strategy meets those interim year targets as well. The plans are subject to review and approval by the U.S. EPA. The provisions and commitments in a U.S. EPA-approved SIP are federally enforceable. The CAA also allows interested parties to sue U.S. EPA, the state, or local agencies to compel implementation of an approved SIP.

The attainment dates in the CAA are tied to the severity of the local problem: the areas with the most extreme problems are given the most time to attain the standard. The South Coast Air Basin is the only nonattainment area in the country classified as "extreme" for ozone. An area with an "extreme" classification must provide for attainment of the ozone standard by November 15, 2010. Because of the area's "extreme" classification, the South Coast SIP may also rely in part on long-term, advanced technology measures under section 182(e)(5) of the Act. These long-term measures may include a less-defined commitment to achieve emission reductions through further development of pollution reduction technologies and techniques.

The CAA assigns ultimate responsibility for achieving the NAAQS to the states. ARB has been delegated the authority to establish California-only new vehicle standards for most classes of motor vehicles, but the Act specifies that the authority for certain classes of vehicles, including aircraft, interstate locomotives and marine vessels, and some off-road engines, remains exclusively with the federal government. ARB also sets emission standards for fuels and consumer products. Other State agencies are responsible for the vehicle inspection and maintenance program (Bureau of Automotive Repair) and reducing pesticide emissions (the Department of Pesticide Regulation).

State law vests local air pollution control and air quality management districts (districts) with the responsibility to reduce emissions from stationary and area sources, which can range from large industrial facilities to neighborhood gas stations to house paints. California law further requires the districts to develop the local plans required by the CAA. Those plans are generally developed in coordination with the local Council of Government (the local or regional transportation planning agency). California's local and regional plans rely on the combination of local, State, and federal measures to show interim progress and attainment.

Federal law holds each state responsible for implementing the state's CAA responsibilities. California's Health and Safety Code (HSC) designates the ARB as the state's air pollution control agency for all purposes set forth in federal law, including the preparation of the SIP (HSC section 39602). The HSC further specifies that the ARB must adopt the nonattainment area plan approved by a local district, unless the ARB finds, after a public hearing, that the locally adopted plan will not meet the requirements of the CAA (HSC Section 41650(a)). All of California's SIP revisions must be submitted by ARB to U.S. EPA.

B. <u>1994 Ozone State Implementation Plan</u>

On November 15, 1994, California submitted a comprehensive ozone SIP as required by the CAA. That SIP revision included a demonstration of progress and attainment for the South Coast Air Basin and five other nonattainment areas in California. The control strategy in the 1994 SIP included local commitments to adopt rules and transportation control measures (shown in the District's 1994 AQMP), as well as a statewide element to reduce emissions from mobile sources, fuels, consumer products, and pesticides. Both the District and ARB indicated that some of the reductions needed to attain the standard by 2010 would come from long-term, advanced technology measures.

The 1994 SIP also demonstrated that the ozone NAAQS could not be met in the South Coast without additional emission reductions from sources under federal authority. In addition to its own commitments, ARB identified technically feasible emission reduction strategies for federal sources and assigned responsibility to the federal government to implement measures to achieve those reductions.

On September 25, 1996, U.S. EPA approved the 1994 ozone SIP revision and published the notice on January 8, 1997.² This approval made the 1994 SIP federally enforceable. U.S. EPA specified in its notice that the agency did not accept the

² Federal Register volume 62, pp. 1150-1187, January 8,1997.

assignment of emission reductions to the federal government, arguing that the State does not have authority to make this assignment. U.S. EPA agreed instead to initiate a public consultative process to identify potential strategies to reduce emissions from sources subject to federal authority. Over the past five years, U.S. EPA has worked cooperatively with ARB to develop many parallel state and national emissions standards including regulations for on- and off-road heavy duty diesel engines, and locomotives. The consultative process expanded these efforts to explore ways to achieve emission reductions from the aircraft and airports, and marine vessels and ports sectors.

C. <u>1997 Air Quality Management Plan</u>

In 1996, the District developed and adopted the 1997 AQMP which addressed the NAAQS for both ozone and particulate matter 10 microns or less in diameter (PM10). The ozone attainment demonstration in the plan used more recent air quality data and an updated emission inventory compared to the 1994 SIP. The resulting air quality modeling demonstrated attainment in 2010 with fewer emission reductions. As a result, the District was able to delete several of the local control measures included in the 1994 SIP. The 1997 AQMP indicated that the deleted measures were not cost-effective or were not necessary. The 1997 AQMP did not revise either the State or federal measures in the 1994 SIP. ARB approved the 1997 AQMP as an update to the SIP and submitted it to U.S. EPA for approval as a revision to California's Ozone SIP in February 1997.

In January 1999, U.S. EPA proposed to partially approve and partially disapprove the 1997 AQMP as a revision to the Ozone SIP.³ U.S. EPA's proposed disapproval action appeared to be limited to the changes to the local control strategy. The proposed rulemaking identified four specific deficiencies in the 1997 AQMP:

- That the District had already failed to meet several deadlines of the control measure adoption commitments in the 1997 AQMP by the time U.S. EPA made its proposal;
- That deleting control measures from the approved SIP would result in "backsliding," or weakening existing SIP commitments;
- That the 1997 AQMP did not reduce the District's reliance on "long term measures" by increasing the commitment for emission reductions from short-term measures (which U.S. EPA had stated in the 1994 SIP approval notice would be a requirement for approval of subsequent revisions); and
- That the 1997 AQMP continued to make federal assignments, which U.S. EPA had previously found to exceed the State's authority.

U.S. EPA did not specifically identify any other deficiencies with the ozone attainment demonstration. Because U.S. EPA has not approved the 1997 AQMP as a SIP revision, the 1994 SIP remains the approved and federally enforceable ozone plan for the South Coast.

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³ Federal Register volume 64, pp. 1770-1780, January 12, 1999.

D. <u>1997 Environmental Coalition Lawsuit</u>

In September 1997, a coalition of environmental groups filed suit to force implementation of specific commitments in the 1994 Ozone SIP for the South Coast. This coalition included the Natural Resources Defense Council, the Coalition for Clean Air, and Communities for a Better Environment. The suit was filed against the U.S. EPA, ARB, and the District, in the U.S. District Court, Central District of California.

U.S. EPA and ARB settled with the plaintiffs on their portions of the lawsuit early in 1999. The court approved the U.S. EPA's Consent Decree. At the request of the parties, the court dismissed the case against ARB, consistent with an approved settlement agreement.

In the suit against the District, the parties could not initially reach agreement, so that portion of the lawsuit proceeded to a hearing before a U.S. District Court judge. The judge heard arguments in the case in June 1999. His intended decision, issued in August, was based on his assessment that the applicable SIP must be fully implemented unless and until the State revises its plan <u>and</u> U.S. EPA approves that change as a SIP revision. Accordingly, the judge's preliminary decision includes a timetable for the District's adoption of every local measure in the 1994 SIP that had been eliminated or deferred in the 1997 AQMP.

Since the intended decision, the plaintiffs and the District negotiated a settlement agreement. The District Board approved the agreement on December 10, 1999, following adoption of the 1999 Amendment. This settlement includes the same District commitments as the 1999 Amendment -- implementation of the measures adopted since the 1994 SIP, development of specific new measures, and adoption and implementation of specified emission reductions each year. The settlement agreement can be enforced by the court if the District does not fulfill its obligations. The agreement is contingent on U.S. EPA's approval of the 1997 AQMP as amended within six months of submittal. ARB is not party to this settlement agreement, and the agreement in no way prescribes or constricts ARB's actions on the 1999 Amendment. As of this writing, this settlement agreement had not yet been approved by the Court.

E. 1999 Amendment to the 1997 AQMP

On December 10, 1999, the District Board adopted the 1999 Amendment to address the concerns U.S. EPA raised in its January 1999 proposal to disapprove the 1997 AQMP as a SIP revision. The 1999 Amendment is summarized in Chapter II.

Consistent with the settlement agreement, the District has asked both ARB and U.S. EPA to expedite their review and final action on the 1999 Amendment. In a December 10, 1999 letter, ARB requested that U.S. EPA initiate its review of the 1999 Amendment upon adoption by the District Board (see Appendix A). In a letter dated the same day to the District, U.S. EPA indicated its willingness to expedite final action on the 1997 AQMP as amended. ARB and U.S. EPA staffs took these steps to facilitate the settlement discussions and ensure timely action on the new SIP revision; these actions do not preclude either ARB or the U.S. EPA Administrator from taking any action authorized by federal and State law.

II. SUMMARY AND EVALUATION OF THE 1999 AMENDMENT

This chapter reviews the key elements of the 1999 Amendment and provides our evaluation of those elements against the requirements for SIP revisions. The 1999 Amendment is a focused, interim revision that affects only the locally adopted, stationary and area source control strategy for ozone. The 1999 Amendment does not change any commitments in the 1997 AQMP that pertain solely to particulate matter or carbon monoxide. The 1997 AQMP as amended does not revise the State or federal measures contained in the approved 1994 SIP.

A. <u>Emission Inventory</u>

The 1997 AQMP is based on an emission inventory for the 1993 calendar year that was approved with the 1997 AQMP. As required by the CAA, the 1997 submittal also included a revised 1990 baseyear inventory (backcast from the 1993 inventory).

The inventory for many stationary and area sources under District jurisdiction declined significantly in the 1997 AQMP, as compared to the 1994 SIP. ARB staff reviewed the the underlying emissions, growth factors, and control assumptions for several of the categories with lower emissions, and found the District's estimates to be reasonable. The changes in the anticipated growth to reflect post-recession activity levels are consistent with the information ARB had available when the 1997 AQMP was prepared. Among stationary and area sources, the solvent usage category was a notable exception, showing an increase based on the results of an ARB study. The mobile source emission inventory also showed some change between the 1994 SIP and the 1997 AQMP, due primarily to the use of a more recent mobile source model (EMFAC7G rather than EMFAC7F) for on-road motor vehicle emissions.

The 1999 Amendment does not revise the emission inventory. Progress towards meeting the emission reduction commitments will be measured against the 1997 AQMP emission inventory, which would become the "1997 SIP currency" following U.S. EPA approval of the 1997 AQMP as amended. As a result, the reduction of emissions not identified in the 1997 AQMP baseline cannot be credited towards meeting the commitments in the plan.

B. Modeled Attainment Demonstration

Federal planning requirements dictate the use of an air quality model to demonstrate attainment of a standard throughout a nonattainment area, based on the emissions and control strategy identified in the SIP. A modeled attainment demonstration was included in the 1997 AQMP utilizing updated inventories and more recent episodes. U.S. EPA's proposed disapproval of that plan identified deficiencies only in the proposed control strategy; those deficiencies are addressed in the 1999 Amendment. The revised strategy would achieve the same level of emission reductions in 2010, but at an accelerated rate of progress. Accordingly, ARB staff believes that no further changes to the prior attainment demonstration are needed in this SIP revision to meet this CAA requirement.

C. Control Strategy for Stationary and Area Sources

In the 1999 Amendment, the District uses a three-part commitment to develop, adopt, and implement the control measures needed to reduce emissions from the stationary and area sources under its jurisdiction. The District's control strategy for these sources includes:

- a commitment to implement rules adopted since the 1994 SIP;
- a commitment to develop specified new short-term and long-term measures; and
- a commitment to achieve specified new emission reductions, by year.

Appendix B provides a comparison of the local control measure commitments in the 1994 SIP, the local control strategy changes made in the 1997 AQMP, and the changes proposed in the 1999 Amendment to District measures.

The State measures in the 1994 SIP for three area source categories—consumer products, aerosol paints, and pesticides—are not affected by the 1997 AQMP or the 1999 Amendment.

1. Commitment to Implement Rules Adopted Since the 1994 SIP

The District has adopted 16 rules since the adoption of the 1994 SIP. Those measures are projected to provide 153.9 TPD of VOC emission reductions, and 4.2 TPD NOx reductions. The local rules adopted since the 1994 SIP submittal are identified in Table 1, along with the emission reductions in 2010. Some of these measures are not yet fully implemented, and five measures are considered technology forcing, or are subject to future technology assessments. These technology forcing components account for 28 of the 153.9 TPD ascribed to adopted measures.

The 1999 Amendment notes that these adopted measures are part of the District's SIP commitment. If any of these rules are revised so that the emission reduction target is not met, the District will find equivalent reductions to fulfill its SIP commitment.

Table 1 District Rules Adopted Since the 1994 Ozone SIP

[Table 2-5 in the 1999 Amendment]

Control Measure/Rule	Title	Adoption Date	Implementation Schedule	Reductions (TPD in 2010)		
Rules Without Technology-Forcing Limits and/or Technology Assessments						
CTS-C (Rule 1171)	Emission Reductions from Solvent Cleaning Operations	1996	1999	26.8		
CTS-02H (Rule 1107)	Emission Reductions from Metal Parts and Products (VOC)	1998	1999	8.8		
CTS-02M (Rule 1145)	Emission Reductions from Plastic, Rubber, Glass Coatings (VOC)	1997	1998	1.2		
CTS-02N (Rule 1122)	Emission Reductions from Solvent Degreasers (VOC)	1997	1999	48.1		
CTS-07 ¹ (Rule 1113)	Further Emission Reductions from Architectural Coatings (VOC)	Phase I: 1996 Phase II: 1999	1998-2008 2002-2006	14.8 16.5		
CMB-02B (Rule 1146.2)	Emission Reductions from Small Boilers and Process Heaters (NOx)	1998	2000-2006	4.2 ²		
FUG-01 (Rule 462)	Emission Reductions from Organic Liquid Transfer (VOC)	1995	1999	0.8 ³		
FUG-02 (Rule 1176)	Emission Reductions from Sumps and Wastewater Separators (VOC)	1996	1997	5.0 ³		
PRC-03 (Rule 1138)	Restaurant Operations (VOC)	1997	1999	0.2		
RFL-02 (Rule 461)	Further Emission Reductions from Gasoline Dispensing Facilities (VOC)	1995	1998	3.7 ³		
Rule 1104	Wood Flat Stock Coating Operations (VOC)	1998	2000	(negligible)		
	nission Reductions from Rules withou d/or Technology Assessments	t Technology-Fo	orcing Limits	VOC: 125.9 NOx: 4.2		
	nnology Forcing Limits and/or Technology	v Assessments		140A. 4.2		
Rule 1136 ⁴	Wood Products Coatings (VOC)	1996	2005	7.9		
Rule 1124 ⁴	Aerospace Assembly and Component Manufacturing Operations (VOC)	1996	2002	0.2		
Rule 1130.1 ⁴	Screen Printing Operations (VOC)	1996	2003	0.1		
Rule 1168 ⁴	Adhesive Applications (VOC)	1998	2003	1.3		
CTS-07 ¹	Further Emission Reductions from Architectural Coatings (VOC)	Phase II: 1999	Phase II: 2002-2006	18.5		
(Rule 1113)	VOC: 28.0					
	Subtotal: Emission Reductions from Rules with Technology Forcing Limits and/or Technology Assessments					
			Total	VOC: 153.9 NOx: 4.2		

¹CTS-07 was adopted in two phases. Phase I was adopted in November 1996 and Phase II in May 1999. 18.5 TPD of Phase II reductions are subject to technology assessment prior to final implementation.

² Rule 1146.2 is expected to achieve 7.9 TPD of NOx reductions. However, only 4.2 TPD emissions were in the 1997 AQMP baseline emissions inventory.

³The projected reductions were incorporated in the 1997 AQMP baseline emission inventories.

⁴The projected reductions were incorporated in the 1994 Ozone SIP and 1997 AQMP baseline emission inventories. The recent amendments delayed the implementation of technology forcing limits.

2. Commitment to Develop Specific New Measures

Traditionally, California's nonattainment area plans identify control measures that will be needed to attain the standard, when those measures will be adopted and implemented, and the reductions each measure will achieve. Since the planning period for each plan may span several years, and California's plans tend to rely on new and emerging technologies, both the State and districts often find that not all control measures can be adopted exactly as anticipated in the plan. The 1999 Amendment identifies potential short-term measures with adoption dates through 2003 and provides a general description of the potential long-term measures, with a commitment that all needed emission reductions will be implemented by 2010. This construction is designed to allow flexibility in the development of the long-term control measures.

In the 1999 Amendment, the District commits to develop specific short-term and long-term measures (if needed) to meet the total emission reduction commitment of 76.1 TPD VOC and 7.6 TPD NOx by 2010. Table 2 shows the short-term and long-term measures, along with the adoption and implementation dates and anticipated emission reductions. If the District staff later believes a measure in the 1999 Amendment to be infeasible, the District Board will consider such a finding in a public hearing. If a proposed measure is found to be infeasible or less effective than anticipated, the District will achieve equivalent emission reductions, on the same schedule, through another rule or program.

Short-term measures. The 1999 Amendment commits the District to the adoption of 26 short-term measures, shown in Table 2, that are projected to result in at least 48.1 TPD of VOC reductions and 7.6 TPD NOx in 2010, or the adoption of alternative measures sufficient to provide equivalent reductions. The commitment also specifies adoption and implementation dates shown in Table 2 for each rule. A range of emission reductions is provided for many of the short-term control measures. The lower end of each range represents the District's short-term measures commitment: which the District's analysis indicates are likely to be achievable within the specified timeframe. The specific short-term commitment is the sum of the reductions from the lower end of the range specified for each measures. The upper end of each range is subject to more uncertainty and may require additional control method evaluation and development. Reductions beyond the short-term commitment will reduce the long-term commitment.

The control strategy clearly identifies the rules to be adopted or revised through 2003 (short- and intermediate-term measures). No adoption dates or anticipated emission reductions are specified for six short- and intermediate-term measures that require further development. Reductions from these measures are also not included in the 48.1-78.1 TPD VOC emission reductions anticipated from near-term measures, but any reductions realized from these measures would help fulfil the District's short-term emission reduction commitment.

Table 2 New Short-Term and Long-Term Measures Emission Reductions in 2010

(Tables 2-1 and 2-4 in the 1999 Amendment)

Control Measure Number	Control Measure Name	Adoption Date	Implementation Period	Reductions (TPD in 2010)				
Short-and Intermediate-Term Control Measures								
CTS-02C (P2) ¹	Further Emission Reductions from Solvent Cleaning Operations (Rule 1171) (VOC)	1999	2002	11.0 - 27.0				
CTŚ-02E	Emission Reductions from Adhesives (Rule 1168) (VOC)	2000	2007-2008	1.3				
CTS-02O	Emission Reductions from Solvent Usage (Rule 442) (VOC)	2000	2002	1.0 - 2.0				
CTS-07(P3)	Further Emission Reductions from Architectural Coatings and Cleanup Solvents (VOC)	2003	2006-2008	9.8				
CTS-08	Further Emission Reductions from Industrial Coating and Solvent Operations (VOC)	Phase I: 2002 Phase II: 2003	2004-2008 2005-2008	2 - 3 3 - 4				
CTS-09	Further Emission Reductions from Large Solvent and Coating Sources (VOC)	Phase I: 2000 Phase II: 2002	2003-2004 2005-2006	4 - 6 3 - 5				
FUG-03	Further Emission Reductions from Floating Roof Tanks (Rule 463) (VOC)	TBD	TBD	TBD				
FUG-04	Further Emission Reductions from Fugitive Sources (Rule 1173) (VOC)	<u></u> 2	2	2				
FUG-05	Further Emission Reductions from Large Fugitive VOC Sources (VOC)	Phase I: 2001 Phase 2: 2002 Phase III: 2003	2003-2006 2004-2007 2005-2008	1 - 2 1 - 2 1 - 2				
FUG-06	Emission Reductions from Hydrogen Plant Process Vents (VOC)	2000	2001-2003	0.83				
RFL-02(P2)	Further Emission Reductions from Gasoline Dispensing Facilities (Rule 461) (VOC)	2000	2001-2003	2-5				
CMB-06	Emission Standards for New Commercial and Residential Water Heaters (NOx)	1999	2002-2005	7.6				
PRC-03(P2)	Further Emission Reductions from Restaurant Operations (VOC, PM ₁₀)	2000	2000	VOC = 0.9				
PRC-06	Further Emission Reductions from Industrial Processes (VOC)	2001	2001	3.0 - 4.0				
MSC-01	Promotion of Lighter Color Roofing and Road Materials and Tree Planting Programs (All Pollutants)	TBD	TBD	0.0				
MSC-03	Promotion of Catalyst-Surface Coating Technology Programs (All Pollutants)	TBD	TBD	0.0				

Table 2 (concluded)

Control	Control Measure	Adoption Date	Implementation	Reductions
Measure Number	Name		Period	(TPD in 2010)
WST-01	Emission Reductions from Livestock Waste (VOC, Ammonia)	2002	2004	VOC = 3.3
WST-02	Emission Reductions from Composting (VOC, PM ₁₀ , Ammonia)	2001	2004-2006	TBD
WST-03	Emission Reductions from Waste Burning (Rule 444)		2002	TBD
WST-04	Disposal of Materials Containing Volatile Organic Compounds (VOC)	2000	2002	0.8
FSS-04	Emission Charges of \$5,000 per Ton of VOC for Stationary Sources Emitting Over 10 Tons per Year (VOC)	TBD	TBD	TBD
FLX-01	Intercredit Trading Program (all)	TBD	TBD	0.0
	Short/Intermediate Term Subtotal			VOC: 48.1-78.1 NOx: 7.6
Long-Terr	m Control Measures			
ADV-CLNG	Solvent Cleaning and Degreasing Operations (VOC)			16.0
ADV-CTS	Miscellaneous Industrial Coating and Solvent Operations (VOC)			6.0
ADV-FUG	Fugitive Emissions (VOC)			5.0
ADV-PRC	Industrial Process Operations (VOC)			1.0
	Long Term Subtotal			VOC: 28
	TOTAL			VOC: 76.1 ⁴ NOx: 7.6

¹ CTS-02C(P2) and portions of CTS-08 were adopted in October 1999 as part of amendments to Rule 1171 and 1130, respectively, subsequent to the release of the draft 1999 Amendment. The control measures are kept in this table for purposes of SIP reduction commitment tracking, consistent with the District's approach.

² Due to potential double-counting, rule development and emission reductions from this measure are combined with FUG-05.

³ Emission reductions are not included in the overall reductions because the District indicates these emissions may not have been included in the 1997 AQMP baseline inventory.

⁴The total VOC emission reductions reflect the sum of the lower-end of the short- and intermediate-term control measure reductions and the long-term measure reductions. Reductions achieved above the lower-end value would reduce the reliance on long-term measures.

<u>Long-term measures.</u> The 1999 Amendment's short-term measure commitment guarantees only 48.1 of the 76.1 TPD VOC reductions needed for attainment. Table 2 shows that the remaining 28 TPD are assigned to four long-term measures, which may require additional time to develop and refine. Additional emission reductions achieved through adoption of short-term measures would reduce the long-term commitment.

3. Commitment to Achieve Specified New Emission Reductions by Year

The 1999 Amendment also contains a separate, but complementary commitment to achieve certain new emission reductions in specified years. Table 3 shows the District's schedule for adoption and implementation of 48.1 TPD VOC emission reductions and 7.6 TPD NOx emission reductions. This schedule must be met even if the District determines that it is not feasible to achieve the emission reductions identified for the specific new measures shown in Table 2. In that case, other measures would be pursued.

Table 3
2010 Planning Inventory Emission Reduction Commitment by Year Achieved through Rule Adoption and Implementation (TPD)

(Table 2-6 in the 1999 Amendment)

	Based on Adoption Date		Based on Adoption Date Based on Imp		Based on Implei	ementation Date*	
	VOC	NOx	VOC	NOx			
1999	11.0	7.6					
2000	10.0						
2001	4.0						
2002	9.3		14.8				
2003	13.8		0.9	7.6			
2004			7.3				
2005							
2006			4.0				
2007			4.0				
2008			17.1				
Total	48.1	7.6	48.1	7.6			

^{*} Represents the final, full implementation date; typically a rule contains multiple implementation dates.

4. Other Elements of District's Commitments

To support the specific control strategy commitments discussed above, the District included other elements in the 1999 Amendment.

<u>Semi-annual progress reports.</u> In the 1999 Amendment, the District also commits to present a semi-annual, quantitative report on its progress towards meeting the commitments to develop specific rules and to achieve specified emission reductions by year. The semi-annual reports would also identify any control measure commitments determined to be infeasible, and would be presented at a regularly scheduled District Board meeting. These reports are a key component of the 1999 Amendment, allowing oversight agencies and the public to readily monitor the District's progress, including any potential issues with implementation of its commitments.

<u>Annual workshops</u>. The District states that it will conduct annual workshops to solicit public assistance in identifying viable control measures.

<u>Voluntary reductions.</u> Changes in industry practices, product formulation, or facility closures can result in "voluntary" emission reductions, or reductions that are not mandated by a SIP-approved rule. The 1999 Amendment would specify that non-mandatory reductions can be used to reduce the baseline, provided the reductions are SIP-enforceable as a result of permit conditions or regulations. The 1999 Amendment notes that it may be necessary to adopt rules that do not result in new emission reductions to ensure enforceability of such reductions, unless the reductions are demonstrated to be real, quantifiable, surplus to the 1997 AQMP, and enforceable through other State or federal regulations.

Enhanced rule review. The 1999 Amendment would commit the District to undertake an enhanced rule review process when considering the adoption of any Table 3 rule that is projected to have a cost-effectiveness (C/E) ratio greater than \$13,500 per ton of VOC reduced. This cutoff reflects the highest C/E ratio in any VOC rule adopted by the District prior to the adoption of the 1999 Amendment. This provision would not prohibit the adoption of a rule with a higher C/E ratio, but would provide staff and the affected industry an opportunity to identify lower cost alternatives. This provision requires that:

- Staff must certify whether the C/E ratio for a proposed rule exceeds that threshold.
- The District Board must hold a public meeting, at least 90 days prior to rule adoption, for any proposed rule that is expected to exceed the \$13,500 C/E ratio on an industry-wide basis. The meeting would allow the affected industry to identify alternatives for achieving the required reductions from that source category at a lower cost, and give the District Board an opportunity to provide direction to the staff.
- The review process for any proposal exceeding the C/E threshold must address incremental cost effectiveness and industry-specific affordability issues, as well as the evaluation of alternative control measures.

5. ARB Evaluation of District's Control Strategy

The 1999 SIP Amendment would strengthen the District's element of the 1997 AQMP, accelerating near-term commitments and building on over 150 tons per day of new emission reductions adopted since the 1994 Ozone SIP. The District would commit to adopt and implement new measures to reduce ozone precursor emissions by over 80 TPD by 2010, with over 60 percent from near-term measures. The 1999 Amendment would also obligate the District to pursue alternate measures in case the specific measures listed do not yield the full complement of emission reductions. The 1999 Amendment will result in achievement of accelerated reductions of VOC and NOx when compared to the 1997 AQMP. In addition, the 1997 AQMP as amended reduces the District's reliance on long-term measures. The supplementary commitments from the District for semi-annual quantitative progress reports to the District Board and annual public workshops on viable control strategies provide assurance that the public and oversight agencies can readily monitor the District's progress in meeting the control strategy commitments. Considered in total, the 1999 Amendment presents an enforceable yet flexible local control strategy.

D. Control Strategy for Mobile Sources

Since the 1999 Amendment focused on revising the control strategy for stationary and area sources under local jurisdiction, it does not alter the control strategy for mobile sources. However, it is useful to note the changes that U.S. EPA approval of the 1997 AQMP as amended would make to the local portion of the mobile source strategy in the 1994 SIP. The District and the Southern California Association of Governments committed to implement local mobile source strategies in the 1994 SIP, including: a Regional Mobility Element (RME) incorporating Transportation Control Measure 1 (TCM01), indirect source measures (for shopping and event centers), and market incentive measures. In the 1997 AQMP, the RME (including TCM01) was reflected in the baseline, fourteen local mobile source measures were superseded by adopted rules or dropped (including all of the indirect source measures), and three new local mobile source emission reduction credit measures were added.

The 1997 AQMP as amended would not modify the State and federal measures in the 1994 SIP, but would update the anticipated benefits of these measures based on the improved emissions inventory in the 1997 AQMP. The only formal revision we have submitted to the State element of the 1994 SIP is the withdrawal of measure M-7, Accelerated Retirement of Heavy-Duty Vehicles and replacement with new measure M-17, Additional Emission Reductions from Heavy-Duty Vehicles. U.S. EPA has not yet approved the M-7/M-17 SIP revision.

E. Rate Of Progress Demonstration

The CAA requires areas to demonstrate that their ozone SIPs will result in steady progress towards attainment by the attainment deadline. To do so, the area must show that the SIP will result in a "rate of progress" (ROP) of at least three percent per year

reduction in VOC emissions through the attainment year. NOx reductions can be substituted for VOC reductions on a percentage equivalent basis. Emission reductions attributable to federal programs (i.e., motor vehicle standards and Reasonably Available Control Technology requirements) are not included in these calculations.

The 1999 Amendment demonstrates that the 1997 AQMP as amended will meet CAA ROP requirements, as shown in Tables 4 and 5. The 1999 Amendment demonstrates ROP in 1999 and 2002 using only VOC emission reductions from previously adopted rules. Milestone compliance demonstrations for 2005, 2008, and 2010 utilize both VOC and NOx emission reductions from adopted measures.

Table 4
Summary of Rate-of-Progress for VOC - South Coast Air Basin
(From Table 2-10 in the 1999 Amendment)

	Milestone Year (TPD) ^a				
Projections and Target	1999	2002	2005	2008	2010
Adjusted 1990 Base Year	1527.4	1515.2	1510.1	1509.4	1508.9
Required % VOC Reduction ^b	24%	9%	5.4%	0.5%	0.5%
Required VOC Reductions	366.6	136.4	81.5	7.5	7.5
VOC Target Level	1160.8	1012.3	925.6	917.4	909.3
Projected VOC Baseline ^c	981.9	945.6	917.5	912.9	909.3
Expected VOC Emissions w/Plan ^d	938.6	826.1	707.6	587.4	413.6

⁽a) Units are TPD unless noted otherwise.

Table 5
Summary of Rate-of-Progress for NOx - South Coast Air Basin
(From Table 2-11 in the 1999 Amendment)

	Milestone Year (TPD) ^a				
Projections and Target	1999	2002	2005	2008	2010
Adjusted 1990 Base Year	1472.2	1472.2	1472.2	1472.2	1472.2
Required % NOx Reduction ^b	0%	0%	3.6%	8.5%	5.5%
Required NOx Reductions	0.0	0.0	53.0	125.1	81.0
NOx Target Level	1472.2	1472.2	1419.2	1294.1	1213.1
Projected NOx Baseline ^c	956.1	858.8	796.6	763.5	751.1
Expected NOx Emissions w/Pland	935.1	814.5	694.5	609.0	530.4

Footnotes: See Table 4

⁽b) 24% reduction by 1999 and 3% per year thereafter (total VOC and NOx reductions). Combine VOC and NOx percentages for total.

⁽c) Projected baseline emissions taking into account existing rules (excluding rules with technology forcing limits and/or technology assessments as identified in Table 1, and emissions from future compliance dates in NOx Rule 1102.2). Emission reduction credits are included in this projection.

⁽d) Emissions with the implementation of the proposed control strategies in the Plan.

F. Conformity

Under Section 176(c) of the CAA, federal funds and decisions may not support activities that contribute to violations of the NAAQS. The Act established a process, known as conformity, for assuring that federal decisions are consistent with the SIP.

1. Transportation Conformity and Motor Vehicle Emission Budgets

Transportation plans, transportation improvement programs, and transportation projects that involve federal funds must be shown to result in emissions that do not exceed estimates for motor vehicles in the SIP's progress and attainment demonstrations. This ceiling is set for on-road motor vehicles only and is called the emissions budget.

The transportation conformity emissions budget submitted as part of the 1997 AQMP was subsequently revised to reflect a change in the State's portion of the 1994 Ozone SIP strategy. The modified budget was discussed in an ARB report, Proposed Revision to the California State Implementation Plan [for] Heavy-Duty Vehicles, January 27, 1998, and was submitted as a SIP revision on April 15, 1998. The 1999 Amendment does not revise these conformity budgets.

2. General Conformity

Section 176(c) of the CAA also prohibits non-highway federal actions from contributing to violations of the national ambient air quality standards. This requirement, known as "general conformity," applies to federal actions and federally funded projects. The South Coast Air Basin's general conformity budgets were submitted as part of the 1997 AQMP, and would not be changed by the 1999 Amendment.

G. <u>Local Plan Adoption and Review Process</u>

The CAA requires an agency to provide at least 30 days notice to the public of its intent to modify a SIP. The District's draft 1999 Amendment was developed on a compressed schedule in response to settlement negotiations in an environmental coalition lawsuit against the District. Nonetheless, both the Draft Proposed 1999 Amendment, and the Draft Supplemental Environmental Impact Report on the proposed 1999 Amendment, were available for public review on October 7, 1999, over 30 days prior to the District's December 10, 1999 plan adoption hearing. This process satisfies the SIP notice requirements of the CAA.

The District held two series of public workshops on the proposed 1999 Amendment, each consisting of five workshops held throughout the Basin. Workshops held from October 12 through October 14 presented the initial draft 1999 Amendment and the Draft Supplemental Environmental Impact Report. At the second set of five workshops, held from November 15 through November 18, District staff highlighted revisions that had been made in response to comments received on the initial draft.

The proposed 1999 Amendment was also subject to extensive review and comment by the District's AQMP Advisory Group, an ongoing stakeholders group convened by the District to provide advice and comment on its air quality planning efforts. The AQMP Advisory Group proposed the enhanced review process for rules projected to exceed the \$13,500 C/E level, which is part of the approved 1999 Amendment.

H. Enforceability

The 1999 Amendment includes numerous commitments by the District to develop and adopt measures, to achieve emission reductions, and to take other administrative actions in support. The combination of these elements provides a strong basis for enforcement if the District does not meet its obligations. If U.S. EPA approves the 1997 AQMP as amended as a SIP revision, U.S. EPA, ARB, or a private citizen could take action against the District for any of the following:

- If the District does not adopt and implement measures that will achieve the aggregate emission reductions in Table 3 according to the schedule in that table.
- If the District does not develop and adopt all of the short-term measures in Table 2 on schedule to achieve at least the minimum reductions, unless the District Board finds these measures (or a portion thereof) infeasible and adopts substitute measures that achieve equivalent reductions in the same adoption and implementation timeframe. Also, if the District does not adopt and implement the long-term measures in Table 2 if needed to fulfill the entire emission reduction commitment.
- If the District does not achieve the emission reductions specified in Table 1 on schedule, from either the rules identified in the table or substitute measures.

III. UPCOMING COMPREHENSIVE PLAN REVISION

We view the 1997 AQMP as revised by the 1999 Amendment as an interim update to the SIP. The Southern California Ozone Study (SCOS) is a coordinated effort to provide better air quality modeling tools for the region. The intensive monitoring program was conducted in the summer of 1997, and continued in a limited form in 1998. ARB and District staff are also updating emission inventories (utilizing EMFAC2000 vehicle emission estimates, the new OFFROAD mobile model, and updated regional growth and control data). These efforts are likely to result in a new carrying capacity for ozone precursors. The Comprehensive Plan Revision will reflect all of this new information, as well as an updated control strategy, for consideration by the District and ARB in the late 2000-early 2001 timeframe and submittal to U.S. EPA as a SIP revision in 2001. Table 6 shows the technical changes anticipated in the 2000-2001 Comprehensive SIP Revision, compared to the 1997 AQMP, and the 1999 Amendment.

Table 6
Comparison of Technical Basis for 1997 AQMP, 1997 AQMP as Amended, and 2000-2001 Comprehensive Plan Revision

	1997 AQMP	1999 Amendment	2000-2001 Comprehensive Plan
Emission Inventory Baseyear	1993	Not changed	1997*
Mobile Source Inventory	EMFAC7G	Not changed	EMFAC2000
Economic Forecast Baseyear	1987	Not changed	1997
Air Quality Model	UAM-IV	Not changed	TBD
Number of Episodes Modeled	2-4	Not changed	3-4**
High Ozone Value Modeled	.2933 ppm	Not changed	.19 ppm*
Day-specific data available	Limited	Not changed	Extensive*
Strategies Updated	Ozone, PM, CO, NOx	Ozone	Ozone, PM, CO
Local Strategy	yes	yes	yes
State Strategy	no	Not changed	yes
Federal Strategy	no	Not changed	no

^{*}A July 1998 episode with a peak 1-hour high of .24 ppm ozone may be developed to augment the results of 1997 SCOS episodes. However, only limited data are available for that episode.

^{**} In addition, select 1987 episodes from the 1997 AQMP will be modeled with revised data for continuity and model performance purposes.

IV. ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS

District staff evaluated the environmental effects of the proposed 1999 Amendment to the 1997 AQMP pursuant to the requirements of the California Environmental Quality Act (CEQA). The District prepared a Draft Supplemental Environmental Impact Report (SEIR) and concluded that no environmental media would be adversely affected by the proposed project. Since no significant adverse impacts were identified, an analysis of project alternatives pursuant to CEQA Guidelines 15126.6 was not required. The Draft SEIR was circulated for a 30-day public review period. In addition, the findings in the draft SEIR were summarized at each of the workshops held on the 1999 Amendment. Twelve comments were received and each was addressed and incorporated in the Final SEIR. We reviewed the SEIR for the 1999 Amendment and find that it adequately evaluates the potential environmental impacts of the plan, consistent with CEQA regulations. We concur with the District's conclusions, and find that the District has met its obligations under CEQA.

District staff also prepared a socioeconomic impact analysis for the Draft 1999 Amendment, and released the report for public comment on October 27, 1999. The socioeconomic report evaluated the impact of the 1999 Amendment relative to the impacts associated with the adopted 1997 AQMP. The overall benefits of implementing the 1999 Amendment were assumed to be the same as those calculated for the 1997 AQMP—\$5.7 billion to \$5.8 billion in 1993 dollars. However, the report acknowledged that the overall benefits may be greater since the 1999 Amendment would accelerate the pace of emission reductions. The analysis estimated that the overall cost of the 1999 Amendment will be \$1.76 billion compared to \$1.71 billion for the 1997 AQMP. Implementation of the 1999 Amendment would result in about 1,700 fewer jobs created each year than without the plan. However, implementation of the mobile source control strategy could reduce this loss of potential new jobs to 1,000 per year.

The enhanced rule review process for measures with a cost-effectiveness ratio greater than \$13,500 per ton of VOC reduced was added to the 1999 Amendment in response to stakeholder concerns raised by the socioeconomic impact analysis.

V. STAFF RECOMMENDATIONS

Staff recommends that the Board approve the proposed 1999 Amendment to the 1997 AQMP for the South Coast Air Basin as a revision to the California Ozone SIP. We further recommend that the Board direct staff to submit this Amendment to U.S. EPA no later than February 4, 2000 to facilitate U.S. EPA's expedited processing and action on this SIP revision.

The 1999 Amendment addresses all of the reasons given by U.S. EPA for its proposed disapproval of the 1997 AQMP except one—its objection to California's assignment of emission reduction responsibilities to the federal government. Since the 1997 AQMP as amended relies on the same federal measures as the U.S. EPA-approved 1994 SIP, we believe this SIP revision is also approvable. Approval of this SIP revision is important to ensure that the federally approved SIP continues to reflect updated emissions, modeling, and control strategies. As a practical matter, SIPs need to be revised and approved on a regular basis. This SIP revision is a necessary interim plan that provides a framework for continued air quality progress while the next comprehensive SIP is developed.